# CLAIMS

1. A cell-balancing circuit for a battery pack having a plurality of series-arranged cells comprising:

a bridge connected around a first cell, including a bypass resistor in series with a switch; and

a cell monitor/regulator having an input connected across the first cell for measuring a charge of the first cell, wherein the cell monitor/regulator closes the switch when a charge of the first cell equals a maximum value.

2. The circuit as set forth in claim 1 wherein the cell monitor/regulator includes a comparator that compares a relative voltage potential across the first cell with respect to a reference voltage potential.

3. The circuit as set forth in claim 2 wherein the cell monitor/regulator includes a voltage divider connected across the first cell and having an output connected to a first input of the comparator, and a reference voltage source that outputs the voltage potential to a second input of the comparator.

4. The circuit as set forth in claim 3 wherein an output of the comparator is connected to a lead of the switch, the switch being constructed and arranged so that the switch closes when the comparator measures a voltage at the second input greater than a voltage at the first input.

5. The circuit as set forth in claim 4 wherein the switch comprises a transistor that is variably saturated in response to an output of the comparator.

6. The circuit as set forth in claim 1 further comprising battery pack terminals located at respective opposing ends of the series-arranged cells, and a charging circuit, the terminals being connected to respective opposing leads of a charging circuit so as to charge the cells.

7. The circuit a set forth in claim 6 wherein the charging circuit includes a sense resistor located in line with one of the terminals, a voltage sensor that measures an overall voltage across the sense resistor and a regulator that determines a maximum current delivered to the battery pack by the charging circuit in response to a measured value the overall voltage.

8. The circuit as set forth in claim 7 wherein the charging circuit and the battery pack each receive current from a transcutaneous energy transmission (TET) module implanted in a body and the battery pack is adapted to be implanted in the body.

9. The circuit as set forth in claim 8 wherein the battery pack is operatively connected to a life-saving system implanted in the body.

10. The circuit as set forth in claim 9 wherein the life-saving system includes a heart treatment device.

11. The circuit as set forth in claim 1 wherein the cells comprise lithium ion-type cells.

12. The circuit as set forth in claim 1 wherein each of the cells includes a respective a bridge connected around each of the cells, including a bypass resistor in series with a switch, and a cell monitor/regulator having an input connected across each of the cells for measuring a charge thereof, wherein the cell monitor/regulator closes the switch when a charge of each of the cells respectively equals a maximum value.

13. The circuit as set forth in claim 12 wherein the cells comprise at least six cells.

14. The circuit as set forth in claim 13 wherein the cells comprise lithium ion-type cells.

15. A method for balancing charge levels of cells in a multiple-cell battery pack having a plurality of the cells arranged in a series comprising:

bridging around a first cell with a bypass resistor and a switch;

monitoring a charge level of one of the cells based upon an input connected across the first cell; and

closing the switch when the charge level of the first cell equals a maximum value so as to shunt charge current around the cell through the bypass resistor.

16. The method as set forth in claim 15 wherein the step of monitoring includes comparing a relative voltage potential across the first cell with respect to a reference voltage potential.

17. The method as set forth in claim 16 wherein the step of comparing includes providing cell monitor/regulator includes a voltage divider connected across the first cell and having an output connected to a first input of the comparator, and a reference voltage source that outputs the voltage potential to a second input of the comparator.

18. The method as set forth in claim 17 further comprising connecting an output of the comparator to a lead of the switch, the switch closing a path through the bridge when the comparator measures a voltage at the second input greater than a voltage at the first input.

19. The method as set forth in claim 18 further comprising saturating a transistor in response to an output of the comparator when the comparator measures a voltage at the second input greater than a voltage at the first input.

20. The method as set forth in claim 15 further comprising locating battery pack terminals at respective opposing ends of the series of the plurality of the cells, and connecting respective opposing leads of a charging circuit to the terminals at predetermined times so as to charge the plurality of cells.

21. The method a set forth in claim 20 further comprising connecting a sense resistor in line with one of the terminals, and measuring an overall voltage across the sense resistor and regulating a maximum current delivered to the battery pack by the charging circuit in response to a measured value the overall voltage.

22. The method as set forth in claim 15 wherein the cells comprise lithium ion-type cells.

23. The method as set forth in claim 15 further comprising monitoring each of the cells based upon an input connected across each of the cells for measuring a charge of the each of the cells respectively, and providing a bridge around the each of the cells, the bridge including a respective bypass resistor and a respective switch and closing the respective switch when the charge of the each of the cells equals a maximum value so as to shunt charge current around the each of the cells through the respective bypass resistor.

24. The method as set forth in claim 20 wherein the cells comprise at least six cells.

25. The method as set forth in claim 24 wherein the cells comprise lithium ion type cells.

26. The method as set forth in claim 15 further comprising operatively connecting the cells to a life-saving system and powering the life-saving system with the cells.

27. The method as set forth in claim 26 further comprising implanting the cells in a body and providing an external power source that transmits charging current to the cells.

28. The method as set forth in claim 27 wherein the step of providing the external power source includes transmitting energy through a skin layer of the body using induction.

29. A multiple-cell rechargeable battery pack comprising:

a plurality of cells, each of the cells being interconnected in a series line between a pair of opposing battery pack-end terminals adapted to receive a charge current on the series line;

a respective cell monitor/regulator connected across each of the cells for measuring a charge of the each of the cells; and

a respective shunt bridge connected across each of the cells including a switch that selectively closes the shunt bridge to direct the charge current around the cell through the series line in response to a measurement of the charge of each of the cells by the monitor/regulator .

30. The battery pack as set forth in claim 29 wherein the cell monitor/regulator includes a comparator that operates the switch to close when the charge respectively exceeds a predetermined reference value.

31. The battery pack as set forth in claim 30 further comprising a casing for enclosing the cells that is sealed and comprises a biocompatible material adapted for implantation in a body.

32. The battery pack as set forth in claim 31 wherein the cells are connected to, and receive the charging current from, a transcutaneous energy transmission (TET) system adapted for implantation in a body so as to receive energy through a skin layer of the body by induction.

33. A transcutaneous energy transmission (TET) system adapted for implantation in a body and for powering an implanted life-saving device comprising:

an implanted TET module for receiving energy through the skin and transmitting electricity derived from the energy to a life-saving device; and

an implanted rechargeable battery pack including a battery pack having a plurality of series-arranged cells, having a bridge connected around a first cell, including a bypass resistor in series with a switch, and a cell monitor/regulator having an input connected

across the first cell for measuring a charge of the first cell, wherein the cell monitor/regulator closes the switch when a charge of the first cell equals a maximum value.

34. The TET system as set forth in claim 33 wherein the battery pack is adapted to be charged when the implanted TET module receives energy from an external TET transmitter and to discharge, so as to power the life-saving device when the implanted TET module receives one of either no energy or insufficient energy.